ART2000*s* User Manual

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The small print :

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1. The ART2000s Manual

This manual is designed to help you get the most out of your Avolites ART2000 digital dimming system. Even if you hate reading manuals, read this section because the next couple of pages contain some **important safety information** which you should be aware of.

1.1 The ART2000S

The ART2000s module is a self-contained dimmer unit

The ART2000s controls up to 12 channels. The following module types are currently available:

- 12 channel 16Amp dimming module
- 6 channel 32Amp dimming module (available Q3 2005)

The LCD on the front provide a wealth of information on the dimmer state such as "Load Check" and "fuse fail indicators for each dimmer channel. Each channel can be set-up separately with a curve, A limit and two start address for the two DMX inputs. The user interface consists of a large backlit LCD screen, a joystick and two touch sensitive switches

Other features are: two isolated and floating DMX inputs, 12 faders for local and memory control and lastly an optional 30mA RCB unit.

2. Important safety information

This system uses 3-phase power and can be a serious hazard to health and other equipment.

This manual is however not an electrical safety manual.

The system should be installed and operated only by a competent person. When installing you should check local regulations regarding the separation of lighting fixtures on different phases (see also appendix One Phase per multipin Outlet). If you are in any doubt as to the safe installation of the system you should employ the services of a qualified electrical contractor.

Do not operate the system with any dimmer parts or panels missing because this makes live parts accessible.

Before turning on the ART2000S, ensure that the Mains is connected correctly. The system may be damaged if it is turned on with the power feed connected incorrectly.

3. Connections to the dimmer

3.1 Mains

The dimmer is connected to mains grid with a trailing cable. This cable can be single phase or 3 phase depending on the unit's configuration.

See appendix for cable colours and connections.

In case of a three phase unit, You need to provide a three phase and neutral power supply to the ART2000s (TN-S) which is capable of delivering the amount of power required to run all the lights which are connected to it. If the power supply is under-rated it may trip during your show if you turn too many lights on at once. This is obviously not a good thing to happen. Also, an overloaded mains supply can suffer from a distorted waveform which can make it difficult for the ART module to control your lights smoothly.

Warning: Never use mains supplied with "reduced neutral" cable sizes, as dimmers inherently dump large currents in the neutral connection. These kind of mains supplies are sometimes called "industrial" and are not suitable for dimmer applications.

When ordering or specifying a mains supply state that it is for "phase angle controlled light dimming"

The frequency of the mains is automatically tracked by the system, which makes the ART system suitable for use on local generator sets.

3.2 Channel Outlets

The dimmer channel outlets are on the back, the type of connector used depends on the unit's configuration. When two multipin connectors are fitted the left most (see from the back) will be channels 1-6 or 1-3

See appendix for connections and pin numbers.

3.3 DMX data connection

The DMX is connected using standard 5 pin XLR connectors on the right hand front panel. The left most pair is Line A in, and loop out and the right most pair is Line B in, and loop out.

Both DMX lines are isolated from each other and floating from the dimmer chassis. A 2M resistance is present between Pin 1 and the dimmer chassis to allow for save static discharge when connecting the DMX system.

When the dimmer is the last in line fit a 120R termination plug in the loop out of the used DMX input.
Do not fit a termination plug if the DMX input is not used.

See appendix for connections and pin numbers.

4. Mains Controls on the dimmer

The ART2000S can be fitted with a 30mA RCB breaker

Resetting the RCB

➔ *Rotate the RCB reset Lever on the left front of the dimmer module*

Note: If the RCB is reset the Lever can move free up and down

Note: if the RCB is tripped the Lever is held down by the RCB

Important note:

As with any RCB breaker, Test the RCB frequently by using the Red RCB test switch located on the front.

Do not use the RCB as an ON/OFF switch as this will reduce the RCB contact life

5. The User Interface

The ART2000s uses two touch sensitive switches and a Joystick with an integral Enter switch as user interface

The joystick works in the Up/Down and Left/Right direction. To enter a function or accept a selection press the Joystick knob when it is in the neutral position (no tilt or side ways movement)

The screen is a 128x64 pixels Graphics LCD, and supports 8x21 characters, which are custom defined. A bulb with animated light rays is used as a "hart beat" indicator
(not shown in this document screen examples)

Typical screen after power-up:

```
0 A 001  0 B 002
Status: running
Faders: faders on
---------------------
0 0 0 0 0 0 0 0 0 0  0  0  0
1 2 3 4 5 6 7 8 9 10 11 12
```

The status line indicates the mode the system is in,

System Status modes:

- Running OK (normal operation mode)
- Warning (see System log for details)
- Reset (after power up and manual reset)

5.1 Menu and Screen Time-out rules

Functions time out, screen views do not, so if a DMX menu is up, it will time-out after about 40 seconds.

Continued…

The following screens and modes do not time out

- Default Level and Status screen
- Exclusive Level screen, selected by the user
- Diagnostics screen

5.2 Information screens

The following information screens are available

- Channel status and bar graph (default screen)
- Channel level exclusive from the different sources
- clock
- Software version

After power-up the A2Ks will always use the Channel status and bar graph screen as top level screen.

6. Main Function List

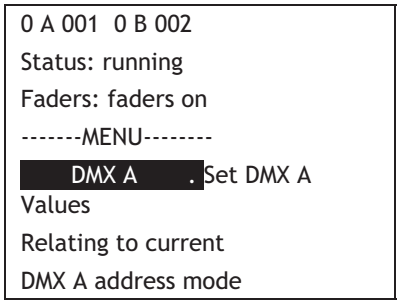
The ART2000s uses two menu layers. To minimize the need to scroll trough large lists, the day to day functions are contained in the "main function" list. And the specialist and rarely used functions are contained in the "more functions" list

---

➔ *Touch the Menu Key*

➔ *Tilt the Joystick to scroll to function and Enter the function by pressing the joystick*

Note: A short description of the function is given on the LCD below the menu selection



Functions

- Help
- DMX A
- DMX B
- DMX address mode
- Curve
- Limit
- Pre-heat
- memory store
- Fader Mode
- More Functions...

➔ *Touch the Menu key to return to the default level screen*

Continued..

Note: After a power-up or reset, pressing the Menu key will start the menu at the [Help] screen, tilting the joystick down will bring [DMX A] function up.

Note: During runtime the menu starts at the point of the last function entry

Note: The menu tree can be scrolled up (Tilting the joystick up) or scrolled down (Tilting the joystick down).

7. More Functions List

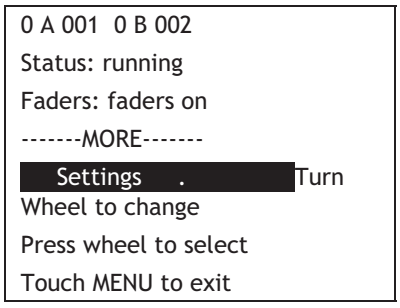
Specialist and rarely used functions are contained in the "more functions" list

---

➔ *Touch the Menu Key*

➔ *Tilt the Joystick to scroll to [More Functions] and enter by pressing the joystick*

➔ *Tilt the Joystick to select the desired function and enter by pressing the joystick*



Functions

- Panel Lock
- Unlock DMX
- Display Levels
- User settings
- Clock
- Software Version
- Software Upgrade
- Mains Status
- Wipe all
- System information

➔ *Touch the Menu key to return to the default level screen*

Note: During runtime the menu starts at the point of the last function entry both in the main function tree and in the More function tree.

TIP: To re-enter a function from the More functions tree, simply touch the Menu key and press the Joystick twice.

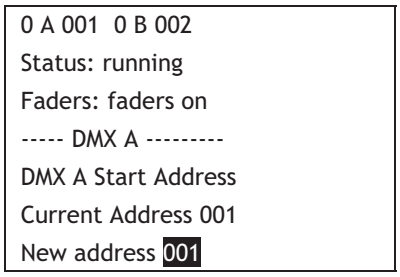
8. DMX A&B Start address in rack mode

Changing the module Start Address

➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [DMX-A] function and press Joystick to Enter*

➔ *Tilt the Joystick to select the DMX address and press Joystick to select and save address*



➔ *Touch the Menu key to exit the function*

Note: Holding the joystick up or down for more than 3 seconds will trigger the value acceleration

Tip: Moving the joystick to the right will clear the address to 000

9. DMX A&B Start address in patch mode

Changing a DMX patch

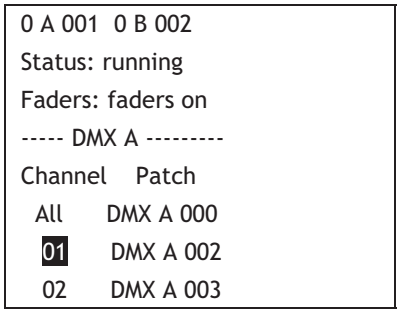
➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [DMX-A] function and press the Joystick to Enter*

➔ *Tilt the Joystick to select desired channel and move the joystick to the right to move to the DMX address field*

➔ *Tilt the Joystick to select the desired DMX address*

➔ *Press the Joystick to save the address, and to return to channel selection*



➔ *Touch the Menu key to exit the function*

Continued…

Note: To load a "1:1 patch", at "channel select" level, scroll to "All" and select by moving the joystick to the address value then set the desired DMX Start Address for the module to start from (dimmer channel 1) and select.

Note: DMX address 000 parks a channel

Note: for US style patching (all channels parked) use channel select "All" and select DMX 000, then patch desired channels.

Note: At "DMX" level, holding the joystick up or down for more than 3 seconds will trigger the value acceleration

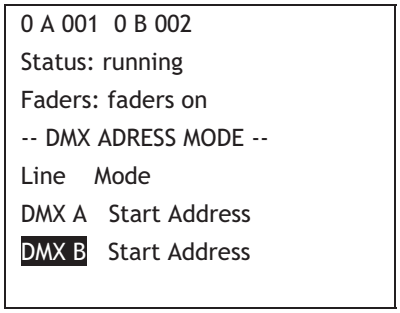
10. DMX Address Mode

Changing the DMX address mode

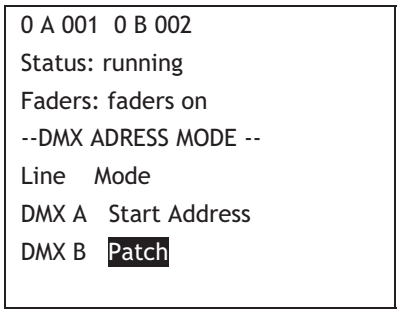
➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [DMX Address Mode] function and press the Joystick to Enter*

➔ *Tilt the Joystick to select desired DMX input move the joystick to the right to select the address mode field*



➔ *Tilt the Joystick to change to the desired patch mode and Press the Joystick to select*



➔ *Touch the Menu key to exit the function*

Note: The Patch data is retained when the DMX address mode is changed from Patch to Start Address

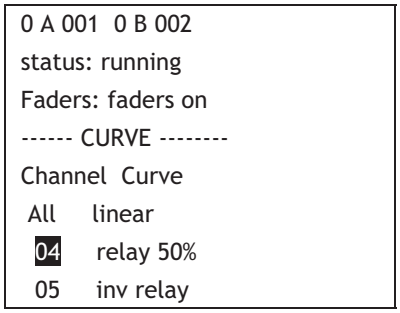
Note: The Start Address is retained when the DMX address mode is changed from Start address to Patch

Note: Use the [wipe all] function to clear both the patch and the start address and default the dimmer to start address 001

11. Curve Menu

Changing a selected curve

- ➔ *Touch the Menu Key*
- ➔ *Tilt the Joystick to select the [Curve] function and press the Joystick to enter*
- ➔ *Tilt the Joystick to select the desired channel and move the Joystick to the right to select Curve field*
- ➔ *Tilt the Joystick to select the desired Curve*
- ➔ *Press the Joystick to save the curve, and to return to channel selection*



Curve options

- Linear
- Relay
- invert relay
- Square
- Desk Defined

- ➔ *Touch the Menu key to exit the function*

Note: To change all channels in one go, at "channel select" level, scroll to "All" and select, then set the desired Curve for all channels and select.

Note: Use "Desk defined" if a curve is set up in the console. This prevents the two curves affecting each other.

12. Limit Menu

Changing a selected limit level

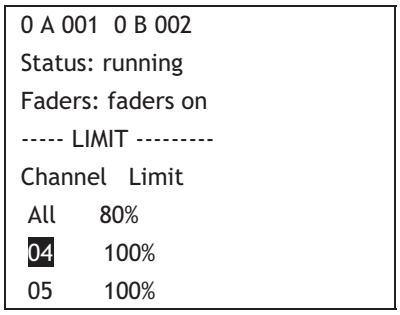
➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [Limit] function and press the Joystick to enter*

➔ *Tilt the Joystick to select the desired channel and move the Joystick to the right to select the Limit field*

➔ *Tilt the Joystick to select the Limit Level*

➔ *Press the Joystick to save the Level, and to return to channel selection*



Limit options

- 10-90% in steps of 1% (A limit 0f 0% gives no output)

➔ *Touch the Menu key to exit the function*

Note: To change all channels in one go, at "channel select" level, scroll to "All" and select, then set the desired Limit Level for all channels and select.

Note: at "Limit Setting" level, holding the joystick up or down for more than 3 seconds will trigger the value acceleration

13. Pre-heat Menu

Changing a selected pre-heat

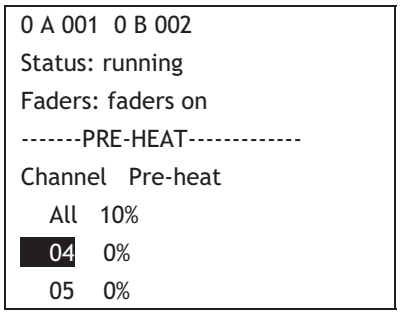
➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [Pre-heat] function and press the Joystick to enter*

➔ *Tilt the Joystick to select the desired channel and move the Joystick to the right to select the channel field*

➔ *Tilt the Joystick to select the Pre-heat Level*

➔ *Press the Joystick to save the Level, and to return to channel selection*



Pre-Heat options

- 0-100%

➔ *Touch the Menu key to exit the function*

Note: To change all channels in one go, at "channel select" level, scroll to "All" and select, then set the desired Pre-heat Level for all channels and select.

Note: at "pre-heat Setting" level, holding the joystick up or down for more than 3 seconds will trigger the value acceleration

14. Memory Store

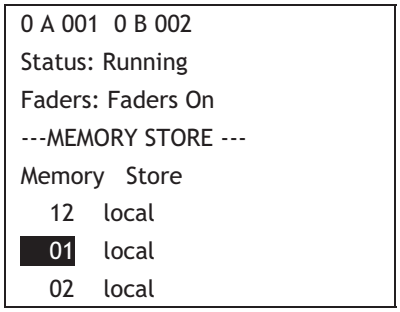
Storing a memory

➔ *Build a look either using the locals faders or under DMX control*

➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [Store Memory] function and press the Joystick to enter*

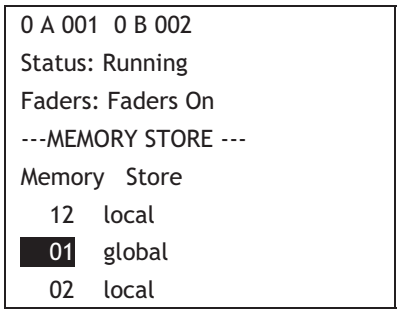
➔ *Tilt the Joystick to select the desired memory location and move the Joystick to the right to select the store field*



memory options

- Memory 1-12

➔ *Tilt the Joystick to select type of store command (Local or Global) and press the Joystick to store and return to the memory location select level*



Store command options

- Local to this dimmer
- Global to all (command send to Other ART2000 dimmers)

➔ *Touch the Menu key to exit the function*

Note: Both Local and Global store command stores a memory on this dimmer

Note: "Local" only the local dimmer stores a memory

Note: "Global" downstream Avolites ART dimmers will also store the selected memory

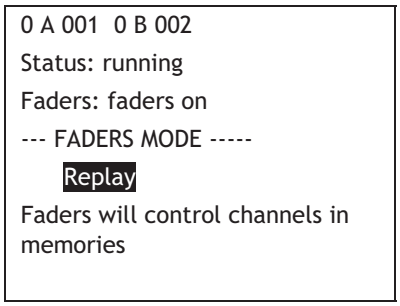
15. Faders Mode

Changing the fader mode

➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [Fader Mode] function and press the Joystick to enter*

➔ *Tilt the Joystick to select the desired Faders Mode and press the Joystick to select*



Fader Mode options

- replay (a single faders can control 12 channels)
- Test (each fader controls one channel)
- Master (Be aware that the console will be disconnected!!)

➔ *Touch the Menu key to exit the function*

Note: "Replay mode" allows for one fader to control the all the module channels

Note: "Test Mode" each faders controls the corresponding channel, this is the default mode after a reset and power-up

Note: "Master Mode" The dimmer can trigger memories on downstream connected Avolites ART dimmers. Be aware console will be disconnected

Note: Changing to Replay and Master will force the faders off to prevent accidental high inrush currents

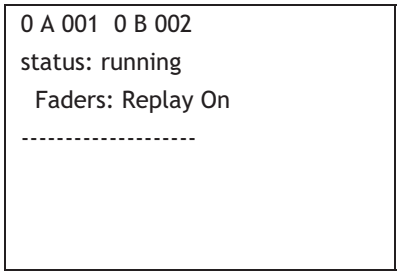
Note: If the dimmer receives DMX from an ART2000*i*, memory 12 may be triggered if the ART2000i frame is set to the "Panic" mode.

16. Memory Replay

Replaying a memory

➔ *check that the LCD screen shows:* Faders: Replay Off *if not see Fader Mode function*

➔ *Touching the Fader key toggles the replay mode on and off*

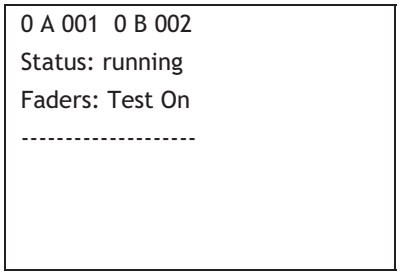


17. Channel Test

Replaying a memory

➔ *check that the LCD screen shows:* Faders: Test Off *if not see Fader Mode function*

➔ *Touching the Fader key toggles the faders on and off*



18. System Information (more functions)

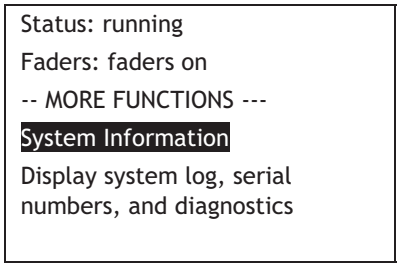
System setup and diagnostic information regarding the system are contained in this menu.

System information

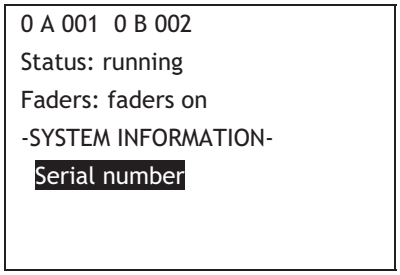
➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [More Functions] and press the Joystick to enter*

0 A 001 0 B 002



➔ *Tilt the Joystick to select [System Information] function and press the Joystick to select enter*



➔ *Tilt the Joystick to select the desired subject and press the Joystick to see the data*

Information subjects:

- System log (list of system events)
- System status (system resource monitor)
- Flicker finder (a test tool to detect flicker)
- Serial number (hardware serial number)
- RDM ID (unique ID for ESTA RDM communications)
- IP address (IP network address)
- IP subnet mask
- IP gateway
- MAC address (unique ID for Ethernet MAC)

➔ *Touch the Menu key to exit the function*

Note: The serial number, RDM ID and MAC address are factory set and cannot be changed by the user. When referring to a dimmer always use the serial number, which is also copied on the back of the dimmer unit

The individual Information sources are detailed below….

18.1 System Log

A log file which is updated automatically reflecting important changes to the system

System Log

➔ *Select* System Log *in [more functions],[System information]*

➔ *and press the Joystick to enter*

The most recent event will be shown first with the date and time

➔ *Tilt the Joystick to select the previous event*

```
0 A 001  0 B 002
Status: running
Faders: faders on
--- SYSTEM LOG -----
 18th June 2004
 12 : 26 : 20
  power on
```

Event options

- Power On (when the dimmer is switched on)
- Power Off (when the dimmer is switched off)
- dmxa,dmxb plugged (DMX stream as been plugged in)
- dmxa,dmxb unplugged (DMX stream has been unplugged)
- manual reset (when reset switch is pressed)
- hotpic booted (when hotpic processor has started)
- Dspic booted (when Dspic processor has started)
- Lcdpic booted (when LCD processor has started)

➔ *Touch the Menu key to exit the function*

Note: There are 256 entries in the log, the oldest entry is written over when the log is full.

Note: the time and date is related to the system clock setting

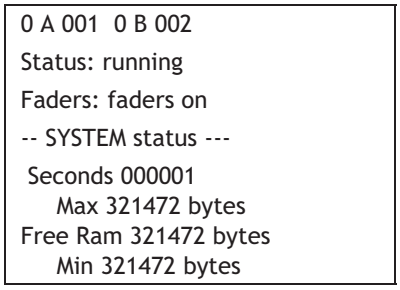
18.2 System Status

A timer and memory counter are presented showing the used system memory of the system (not related to or dependant on user memories)

System Status

➔ *Select* System Status *in [more functions],[System information]*

➔ *and press the Joystick to enter*



➔ *Touch the Menu key to exit the function*

Note: This is an engineering/debug screen, no user information is contained in this screen

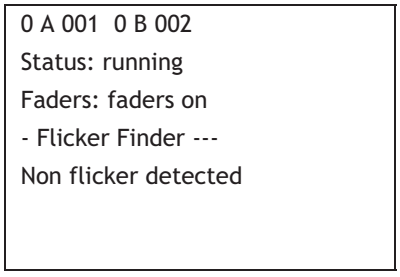
18.3 Flicker Finder

A tool to detect instability in the data stream, this may be used to detect flicker from DMX sources and faders

Flicker finders

➔ *Select* Flicker Finder *in [more functions],[System information]*

➔ *and press the Joystick to enter*



When a change is detected of more than 1 bit the finder will stop and display a message

➔ *Touch the Menu key to exit the function*

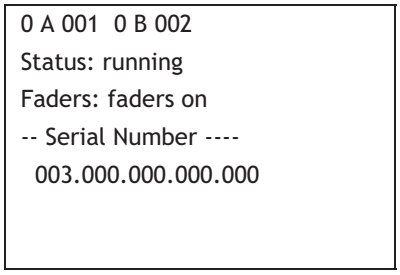
18.4 Serial Number

Shows unique serial number of the dimmer.

Serial Number

➔ *Select* Serial Number *in [more functions],[System information]*

➔ *and press the Joystick to enter*



➔ *Touch the Menu key to exit the function*

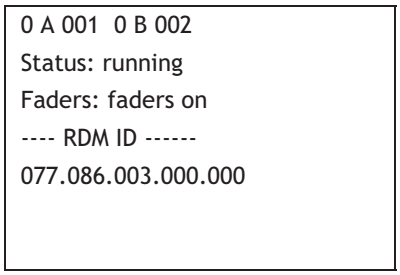
18.5 RDM ID

Shows unique ESTA assigned RDM ID. This ID cannot be changed by the user.

RDM ID

➔ *Select* RDM ID *in [more functions],[System information]*

➔ *and press the Joystick to enter*



➔ *Touch the Menu key to exit the function*

18.6 IP Address, IP mask and Gateway

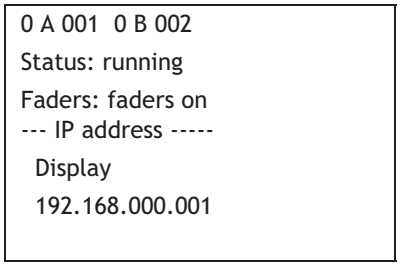
Shows the current IP address of the dimmer module when an Ethernet card is detected. And the IP address can be changed in this menu

Only the IP address is given as an example, IP mask and Gateway follow the same operation.

IP address

➔ *Select* IP Address *in [more functions],[System information]*

➔ *and press the Joystick to enter*



➔ *Touch the Menu key to exit the function*

Changing the IP address, IP Mask and Gateway

When in the [IP address] function:

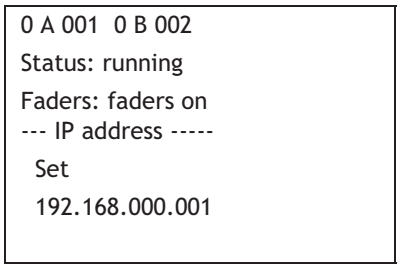
➔ *Tilt the Joystick to select the [Set] and press the Joystick to enter*

➔ *Move the Joystick left or right to select the desired field*

➔ *Tilt the joystick to change the value*

➔ *Press the joystick to save the new system IP address*

Only the IP address is given as an example, IP mask and Gateway follow the same operation.



➔ *Touch the Menu key to exit the function*

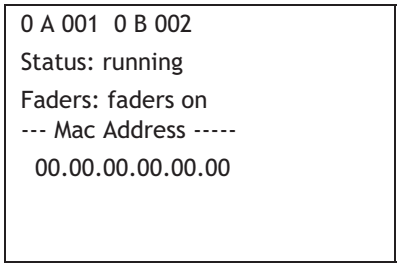
18.7 MAC address

Shows unique Ethernet MAC address when an Ethernet card is detected This Address cannot be changed by the user.

MAC Address

➔ *Select* MAC address *in [more functions],[System information]*

➔ *and press the Joystick to enter*



➔ *Touch the Menu key to exit the function*

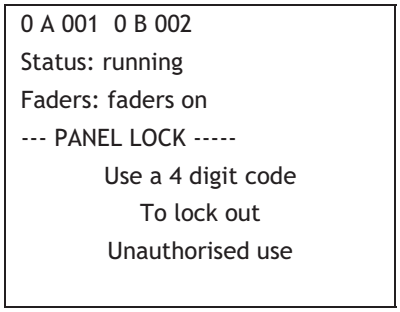
19. Panel Lock (more functions)

Use a 4 digit code to disable programming

➔ *Touch the Menu Key*

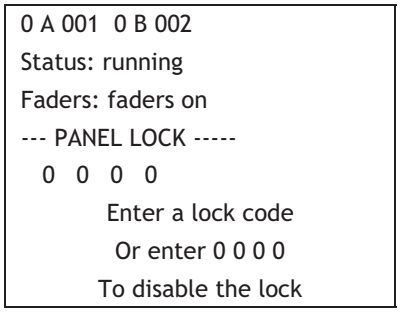
➔ *Tilt the Joystick to select the [More Functions] and press the Joystick to enter*

➔ *Tilt the Joystick to select the [Panel Lock] and press the Joystick to enter the function*



➔ *Move the joystick left and right to select the digit field , and up and down to change the digit value.*

➔ *Press the joystick to select the panel lock code*



➔ *Touch the Menu key to exit the function*

Note: Code 0000 disables the lock

Note: Wipe All clears the Lock code

Note: code 2000 overrides any set code

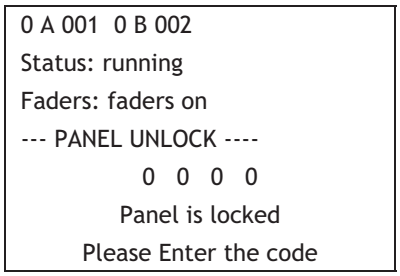
20. Panel Unlock

Gaining access when the panel lock is active

➔ *Touch the Fader or Menu Key*

➔ *Move the joystick left and right to select the digit field, and up and down to change the digit value to the set code.*

➔ *Press the joystick unlock*



Note: when activated (code non zero) the panel locks automatically after 1 minute of no user input

Note: code 2000 overrides any set code

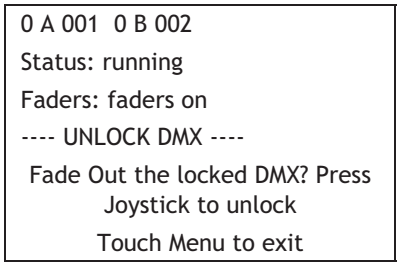
21. Unlock DMX **(more functions)**

Fade out locked DMX levels after a DMX stream has stopped

➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [More Functions] and press the Joystick to enter*

➔ *Tilt the Joystick to select the [Unlock DMX] and press the Joystick to enter the function*



➔ *press the Joystick to unlock the locked DMX*

➔ *Touch the Menu key to exit the function*

Note: the Unlock function fades out locked channels with a 5 seconds fade

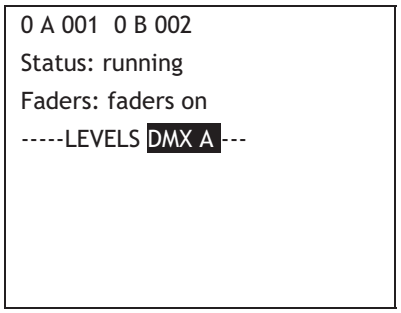
22. Display Levels (more functions)

Show exclusive bar graph of level sources

➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [More Functions] and press the Joystick to enter*

➔ *Tilt the Joystick to select the [Display Levels] and press the Joystick to enter the function*



➔ *Tilt the Joystick to change the displayed Level source*

Source Options

- DMX A
- DMX B
- Faders
- Output

➔ *Touch the Menu key to exit the function*

Note: The output is the level with the curve applied, and therefore may not correspond with the console's output

Note: This function does not time out, to return to the default level and status screen, touch the Menu key

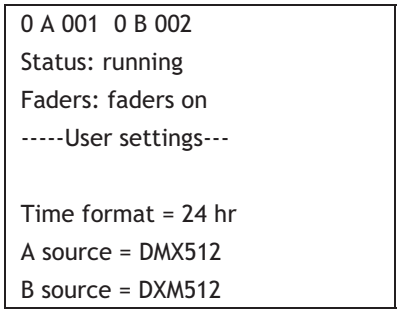
23. User Settings (more functions)

Allows the User to set system configurations like DMX source and time format

➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [More Functions] and press the Joystick to enter*

➔ *Tilt the Joystick to select the [User settings and press the Joystick to enter the function*



➔ *Tilt the Joystick to select the setting to be changed*

➔ *press the Joystick to change the setting*

➔ *Tilt the Joystick to change the setting*

➔ *press the Joystick to change the setting*

➔ *Touch the Menu key to exit the function*

Time options:

- 24 hr
- 12 hr (am/pm)

A&B source options:

- DMX512
- ARTNet

Note: The source can only be changed if an Ethernet card has been detected, in all other cases the data inputs are defaulted to DMX512 data streams

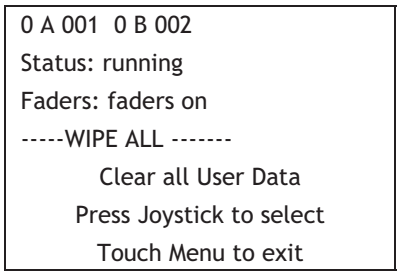
24. Wipe All (more functions)

Clear User settings, and load default values

➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [More Functions] and press the Joystick to enter*

➔ *Tilt the Joystick to select the [Wipe all] and press the Joystick to enter the function*



➔ *Touch the Menu key to exit the function*

Note: Default values are

DMX A and B Start Address 001, module patch mode
All Channels have a Linear Curve selected
All Channels have the Limit is reset to 0%
All channels the pre/heat reset to 0%
All memories are cleared
Panel Lock is unlocked

Note: The system log cannot be cleared

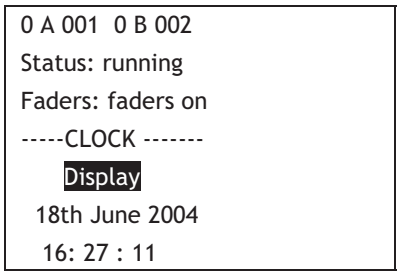
25. Clock (more functions)

Showing System Clock and Date

➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [More Functions] and press the Joystick to enter*

➔ *Tilt the Joystick to select the [Clock] and press the Joystick to enter the function*



➔ *Touch the Menu key to exit the function*

Changing System Clock and Date

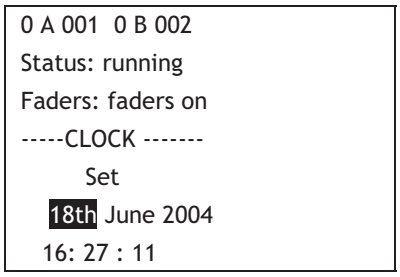
When in the [Clock] function:

➔ *Tilt the Joystick to select the [Set] and press the Joystick to enter*

➔ *Move the Joystick left or right to select the desired field*

➔ *Tilt the joystick to change the value*

➔ *Press the joystick to save the new system clock and date settings*



➔ *Touch the Menu key to exit the function*

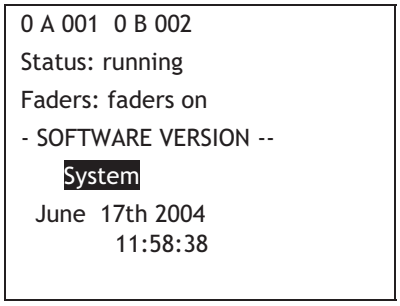
26. Software version (more functions)

Showing the various software versions

➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [More Functions] and press the Joystick to enter*

➔ *Tilt the Joystick to select the [Software Version] and press the Joystick to enter the function*



➔ *Tilt the Joystick to select the different hardware modules and display the loaded version*

Hardware module Options

- System (main controller)
- HotPIC (Load and breaker detect)
- lcdPIC (Fader and touch switches)
- DSPIC (dimming engine)

➔ *Touch menu to exit the function*

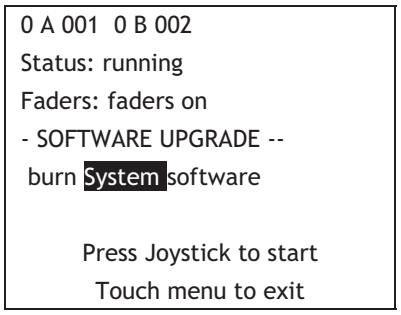
Note: if the hardware module is not connected, or the module is not communicating, no software version can be displayed

Note: Use these version numbers, along with the serial number of the unit to report to the Avolites service department

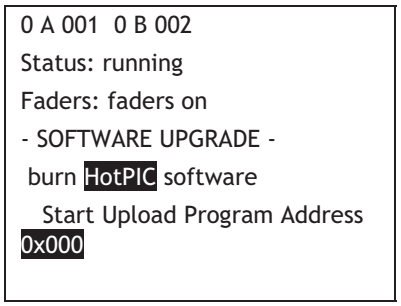
27. Software Upgrade (more functions)

Updating the various software systems

- ➔ *Connect the D9 connector of the Upload cable to a serial port on a windows PC with the upgrade software installed*
- ➔ *Connect the mini DIN to the Upgrade port on the left side panel*
- ➔ *Touch the Menu Key*
- ➔ *Tilt the Joystick to select the [More Functions] and press the Joystick to enter*
- ➔ *Tilt the Joystick to select the [Software Upgrade] and press the Joystick to enter the function*



- ➔ *Tilt the Joystick to select the desired hardware module and press the Joystick to select*
- ➔ *On the PC click on the "UPLOAD" button*



Hardware module Options

- System (main controller)
- HotPIC (Load and breaker detect)
- lcdPIC (Fader and touch switches)
- DSPIC (dimming engine)

- ➔ *Press RESET to exit at this stage and after a successful program session*

Note: The windows upgrade program will not allow you to burn the wrong software in the wrong hardware system

Note: A detailed manual for both the windows program and the upgrade procedure will be provided with the upgrade software

Note: check software version after each upgrade to verify burn success

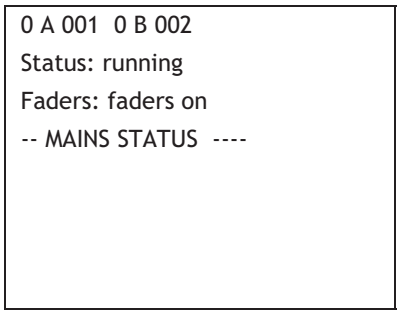
28. Mains Status (more functions)

Show the mains system parameters

➔ *Touch the Menu Key*

➔ *Tilt the Joystick to select the [More Functions] and press the Joystick to enter*

➔ *Tilt the Joystick to select the [Mains Status] and press the Joystick to enter the function*



➔ *Touch the Menu key to exit the function*

29. Software limitations

Below is a list of known limitations for system build: Jan 06 05

29.1 System software

[More functions] > [Mains Status] is not implemented; see also PDE-DSP limitations.

29.2 Known User Interface Quirks

None

29.3 LCD-PIC software limitations

None

29.4 HOT-PIC software limitations

A loaded channel at full shows up as "No Load " (open circle)

29.5 PDE-DSP software limitations

No Mains data talkback to System controller (user interface).
No Version data talkback to System controller (user interface).
3Phase+N WYE supply by default, single phase trough Jumper setting

30. Appendix- Connector Wiring

30.1 Mains colours

30.1.1 Connection tail

Type	PE	neutral	Phase 1	Phase 2	Phase 3
3 phase	Green/Yellow	Blue	Brown	Black	Black
Single phase	Green/Yellow				

30.1.2 Internal mains colours

PE	Neutral	Phase 1	Phase 2	Phase 3
Green/Yellow	Black	Red	Yellow	Blue

30.2 Multipin connections

30.2.1 Socapex standard

	Phase	neutral
Channel 1	1	2
Channel 2	3	4
Channel 3	5	6
Channel 4	7	8
Channel 5	9	10
Channel 6	11	12
PE	13,14,15,16,17,18,19	

Channel allocation on back of the panel

Not fitted	CH. 1-6	CH. 7-12	Not fitted

30.2.2 Harting 1-2

	Phase	neutral
Channel 1	1	2
Channel 2	3	4
Channel 3	5	6
Channel 4	7	8
Channel 5	9	10
Channel 6	11	12
Optional PE	13,14,15,16	
PE	Harting side tab	

Channel allocation on back of the panel

Not fitted	CH. 1-6	CH. 7-12	Not fitted

30.2.3 Harting 1-9

	Phase	neutral
Channel 1	1	9
Channel 2	2	10
Channel 3	3	11
Channel 4	4	12
Channel 5	5	13
Channel 6	6	14
Optional PE	7,8,15,16	
PE	Harting side tab	

Channel allocation on back of the panel

Not fitted	CH. 1-6	CH. 7-12	Not fitted

30.3 DMX pin data

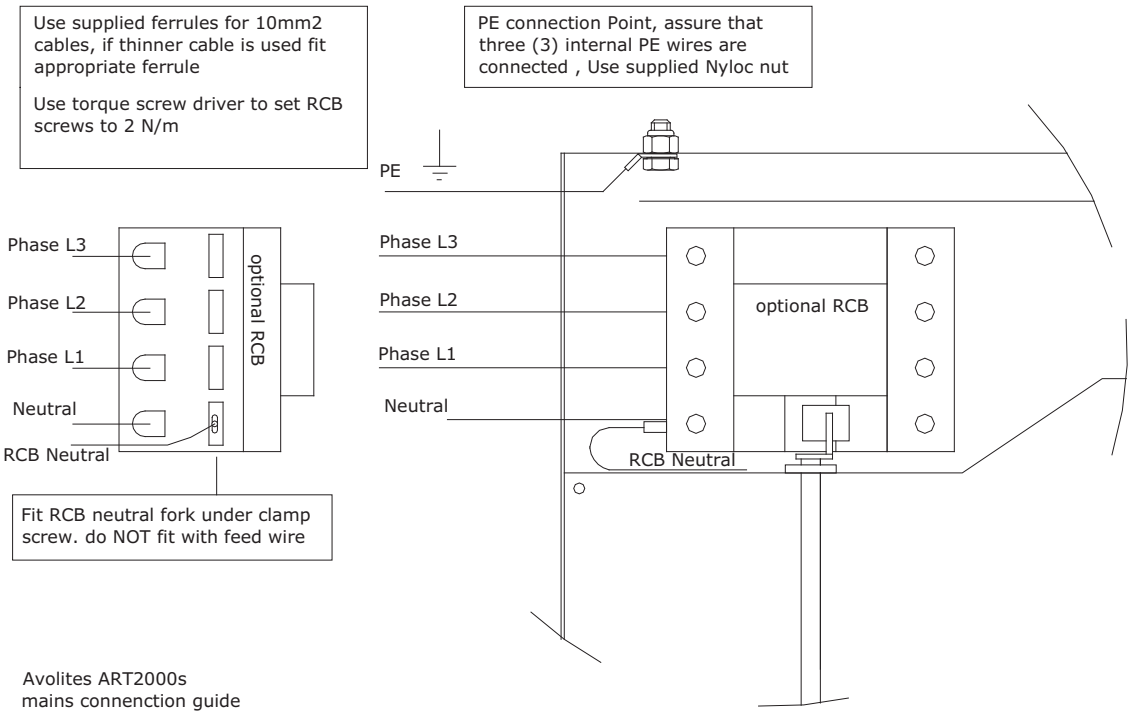
30.3.1 Connector allocation

DMX A in	DMX A Loop-out	DMX B in	DMX B Loop-out

30.3.2 DMX pins

Pin 1	*Floating ground 2M resistance between pin and chassis*
Pin 2	*- Data*
Pin 3	*+ data*
Pin 4	*Wire linked between" in" and" Loop-out"*
Pin 5	*Wire linked between" in" and" Loop-out*

30.4 Mains connections



Avolites ART2000s
mains connenction guide